REMARKS

Applicant wishes to thank Examiner Katcheves for the courtesies extended during the telephonic interview conducted on July 1, 2003 with Applicant's representative to discuss the current rejection of claims 1-6, 8, 9, 14, 17-21, and 23-31 in the present application. Briefly, during the interview Applicant's representative argued that the prior art references failed to disclose or suggest a method which correlates a known organoleptic property of a food product such as taste, smell, color, etc. to an output distribution representing the microbial population, or profile, of the food product. Examiner Katcheves suggested that Applicant amend the claims to replace the term "qualitative property" with "organoleptic property" and to better define the correlative relationship between the known organoleptic property and the microbial profile of the food product in the claims, since such amendments would be given favorable consideration pending an updated search of the prior art. The Examiner also suggested that support be provided for the definition of "organoleptic property" as understood by the food processing industry, which Applicant argued does not encompass safety of the food product.

Applicant hereby amends independent claims 1 and 14 to better define the invention and, as suggested by the Examiner, to emphasize the correlative relationship between the output distribution of populations of microorganisms of a food product as predictive of a known organoleptic property of that food product. Specifically, independent claims 1 and 14 are amended to replace the term "qualitative property" with "organoleptic property." Claim 1 is also amended to recite that the sample is assayed to generate a microbial profile, that the array has a plurality of target species of microorganisms, and that the output distribution is representative of the microbial profile of the sample. Claims 1 and 14 are also amended to recite the additional step of storing information related to the at least one known organoleptic property of the sample in the database, and that the database is mined such that the presence of the at least one known organoleptic property can be predicted in a food product by comparing the microbial profile or output distribution of the food product to the database. Claim 14 is additionally amended to recite that the probes of the array are directed to gene sequences from a plurality of different target species of organisms.

Dependent claim 17 is also amended to recite that the species to be detected are species affecting food quality and not food safety, while dependent claim 25 is amended to replace the

term "amount" with "the quantity." Claim 19 is amended to replace the term "PCR amplification" with "amplification" to provide proper antecedent basis for the claim language. Claims 26 and 29 are amended to replace the term "qualitative properties" with "the at least one known organoleptic property," which is selected from the group consisting of smell, texture, and taste. Claims 28 and 31 are amended to correct the introductory language of the Markush group contained therein. All of these minor amendments are made in order to better define the claimed invention and to remove any ambiguities in the claim language.

Support for all of these amendments can be found throughout the specification, and specifically at page 4, lines 16-20, page 6, lines 7-12 and 20-31, page 7, lines 27-29, page 16, lines 8-32, and page 18, lines 1-13. Accordingly, no new matter has been added by these amendments.

Applicants respectfully request reconsideration of the present application in view of the current amendments and the following remarks.

Brief Summary of Applicant's Invention

By way of introduction, Applicant's invention is directed to methods and apparatus for predicting organoleptic properties of a selected food product by comparing the microbial profile of that food product to a database that correlates known organoleptic properties to an output distribution of identified microorganisms. In other words, Applicant's methods and probes are intended to *correlate known organoleptic properties* (e.g., smell, color, taste, texture, etc.) of a food product with a spectrum of target species of microorganisms that are present in the food product. The information relating to the organoleptic property of the food product and the output distribution of microbial populations of that food product is stored in a database which can be mined to correlate the organoleptic property with the output distribution, so that organoleptic properties of a food product can be predicted by comparing the microbial profile of the food product to this database.

Definition of the Term "Organoleptic Property"

As explained to the Examiner during the telephonic interview of July 1, 2003, the term "organoleptic property," as understood and applied by the food industry to describe a food

product, encompasses sensory characteristics such as flavor, texture, appearance, and color. The term "organoleptic property" does not, however, refer to toxicity or safety of the food product. As support of this definition, Applicant hereby provides several articles following this response which define the term "organoleptic property" consistent with the meaning accorded above (see M.A.J.S. van Boekel et al., "Product quality and food processing: how to quantify the healthiness of a product," *Cancer Letters,* 114: 65-69 (1997) at p. 66, col. 1, under the subheading "2. Product quality and food processing"; J. Bruce German, "Food Processing and Lipid Oxidation," *Impact of Processing on Food Safety,*" Kluwer Academic/Plenum Publishers, New York (1999), pp. 23-50, at page 26, section 2.3.1; and, Valentina S. Chauhan et al., "Studies on organoleptic properties of food products from fresh egg and egg powder through principal component analysis," Nahrung 47(2):102-105 (2003), at Abstract.)

The Prior Art Rejections

Claims 1-6, 8, 9, 14, 17-21, and 23-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Heynecker et al. (hereinafter "Heynecker"), in view of Anderson, Bruckner-Lea et al., Bergeron et al., Nakayama et al., Tauxe, and Megerle for the reasons set forth on page 3 of the March 26, 2003 Office Action. Claims 14, 17-20, and 23-25 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Balch for the reasons set forth on page 4 of the March 26, 2003 Office Action. Claims 1-6, 8, 9, 14-21, and 23-25 are additionally rejected under 35 U.S.C. § 103(a) as being unpatentable over Balch, in view of Anderson, Bruckner-Lea et al., Bergeron et al., Nakayama et al., and Tauxe as set forth on page 4 of the March 26, 2003 Office Action. For the following reasons, Applicant respectfully requests reconsideration and withdrawal of the rejections under Heynecker and Balch.

As discussed during the July 1, 2003 telephone interview with the Examiner, **none** of the cited references teach the method of correlating an **organoleptic property** of a food product with an output distribution representing the microbial populations present in that food product (emphasis added.) Accordingly, independent claims 1 and 14 are amended to now require that the output distribution be correlated to a known organoleptic property. As agreed to during the interview, these amendments would be given favorable consideration by the Examiner, pending an updated search of the prior art. In the current Office Action, the Examiner asserts that Heynecker teaches correlating the output distribution of microorganisms to known qualitative properties, i.e., *food safety* (emphasis added.) As understood and applied in the food industry,

and as supported by the articles following this response, ***the term "organoleptic property" does not include food safety***. Accordingly, Heynecker does not substantially disclose or suggest the claimed invention. Furthermore, its deficiencies are not overcome by its combination with any of the other references cited in the Examiner's rejection, since none of the Anderson, Bruckner-Lea et al., Bergeron et al., Nakayama et al., Tauxe, or Megerle references suggest or teach a method for correlating a known organoleptic property of a food product to the microbial profile of that food product, as is now required of the claimed invention.

This same argument likewise applies to the Balch reference, which the Examiner asserts impliedly teaches the correlation of output distribution of microorganisms to known qualitative properties, i.e., *food safety* (emphasis added.) As amended, independent claims 1 and 14 now require that the output distribution be correlated to a known organoleptic property. Again, as understood and applied in the food industry, and as supported by the articles following this response, ***the term "organoleptic property" does not include food safety***. Accordingly, Balch does not substantially disclose or suggest the claimed invention. Furthermore, its deficiencies are not overcome by its combination with any of the other references cited in the Examiner's rejection, since none of the Megerle, Anderson, Bruckner-Lea, Bergeron, Nakayama, or Tauxe references suggest or teach a method of correlating a known organoleptic property of a food product to the microbial profile of that food product, as is now required of the claimed invention.

In addition, independent claims 1 and 14 are also amended to better define the correlative relationship between the known organoleptic property and the output distribution (i.e., microbial profile) of the food product. During the July 1, 2003 interview, the Examiner suggested making these amendments to better define the claimed invention, since they would be given favorable consideration pending an updated search of the prior art. For all of the reasons above, Applicant respectfully requests reconsideration and withdrawal of the rejections under Heynecker and Balch.

Rejections under 35 U.S.C. §112

The Examiner rejects claims 1-6, 8, 9, 14, 17-21, and 23-31 under 35 U.S.C. §112, 2nd paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as his invention. Specifically, the Examiner objects to the term "known qualitative properties" as being too imprecise and indefinite. Independent claims 1 and

14 are amended to replace the term "known qualitative properties" with "known organoleptic property." Claim 17 is also amended to remove the limitation "safety" from the claim language. Regarding the Examiner's objections to the terms "processing conditions", Applicant refers the Examiner to page 18, lines 14-21 which suggest exemplary data that would fall within the category of "processing parameters," as it relates to the sample of food product being assayed. Thus, Applicant believes the term "processing conditions" is fully described in the specification and therefore is not vague or ambiguous.

Accordingly, Applicant believes that all of the Examiner's rejections with respect to the indefiniteness of the claims are addressed either by the amendments made herein to the claims, or to the remarks above. The Examiner is respectfully requested to reconsider and withdraw the indefiniteness rejections of the pending claims.

Conclusion

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

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Respectfully submitted,

By 

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